Dell PowerEdge C6105

Using the Baseboard Management Controller

Information in this publication is subject to change without notice.
© 2011 Dell Inc. All rights reserved.

Reproduction of these materials in any manner whatsoever without the written permission of Dell Inc. is strictly forbidden.

Trademarks used in this text: Dell™, the DELL logo, and PowerEdge™ are trademarks of Dell Inc. Microsoft® and Windows® are registered trademarks of Microsoft Corporation. Linux® is a registered trademark of Red Hat, Inc. in the United States and/or other countries.

Other trademarks and trade names may be used in this publication to refer to either the entities claiming the marks and names or their products. Dell Inc. disclaims any proprietary interest in trademarks and trade names other than its own.

January 2011 **Rev. A00**

Contents

Introduction 5

BMC Key Features and Functions 5

Using the Web UI 5

Logging in to the Web User Interface 6

System Features 7

- System Information 7
- Component Information 8
- Firmware Update 9

Front Panel User Interface 13

- Power Button 13
- ID Button 13
- LEDs 13

System Information 15

- System Information 15
- List FRU 15
- Components 16

Server Health 16

- Sensor Readings 17
- Sensor Readings With Thresholds 19
- Event Log 21

Configuration 23

- Alerts 24
- Mouse Mode 26
- Network 27
- SMTP 28
- Users 29
- PEF 32

Remote Control **33**
Console Redirection 33
Server Power Control 37
Maintenance **38**
Languages **38**
IPMI 1.5 / 2.0 . . . . . **39**
Command Support List 39

Introduction

This section introduces the Baseboard Management Controller (BMC) and includes the requirements for web-based graphical user interface (GUI), keyboard, video, and mouse (KVM), and virtual media.

BMC Key Features and Functions

The following lists the supported features of the BMC:

- Support for IPMI v1.5 and v2.0
- Out-of-band monitoring and control for server management over LAN
- Dedicate NIC for remote management
- FRU information report, which includes main board part number, product name, manufacturer, etc.
- Health status/hardware monitoring report
- View and clear event logs.
- Event notification by lighting chassis LED indicator and Platform Event Trap (PET)
- Platform Event Filtering (PEF) to take selected action for selected events including NMI
- Chassis management, which includes power control, status report, front panel buttons, and LEDs control
- Watchdog and auto server re-start and recovery
- Support for multi-session user and alert destination for LAN channel

Using the Web UI

The BMC firmware features an embedded web server, enabling users to connect to the BMC using an Internet browser (Microsoft Internet Explorer) without needing to install KVM and virtual storage software on a remote console.

Web-based GUI is supported on the following browsers:

Microsoft Windows:

- Internet Explorer 6, 7 or later
- Mozilla Firefox 2.0 or later

Linux:

- Mozilla Firefox 2.0 or later

NOTE: Before using the web user interface, ensure that the firewall settings are configured to enable access to the following ports: 8890 (KVM), 9000 (storage), 9001, 9002, and 9003.

Logging in to the Web User Interface

Enter the IP address or URL (default DHCP\static IP address) into the address bar of the web browser.

When connecting to the BMC, the login screen prompts for the username and password. This authentication with Secure Sockets Layer (SSL) protection prevents unauthorized intruders from gaining access to the BMC web server. Once authentication is passed, you can manage the server by privilege.

Table 1-1. Default User Name And Password

Field	Default
User Name	root
Password	root

NOTE: The default username and password are in lowercase characters. It is advised to change the root password once you have logged in.

System Features

System Information

The **System Information** tab enables you to view the BMC firmware version, BIOS version, and PIC version. Click the **System Information** tab to view the Remote Management Controller.

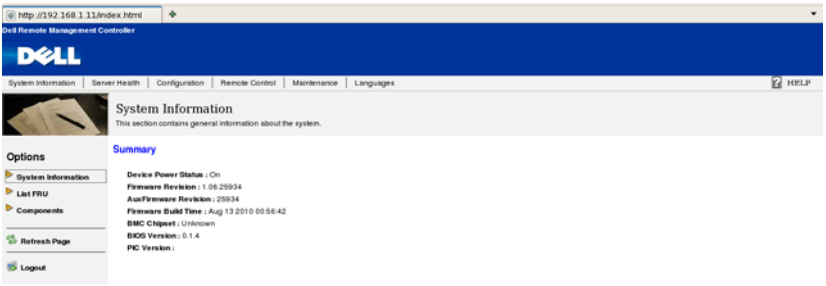
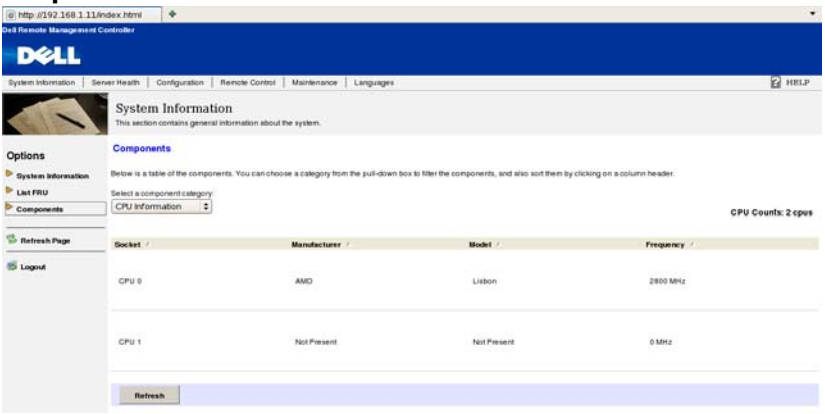


Table 1-1. BMC Summary

BMC Information	Description
Device Power Status	Current power state of the system.
Firmware Revision	Dell Remote Management Controller firmware version.
Aux Firmware Revision	Firmware build number.
Firmware Build Time	Date the firmware was last flashed in the form: MMM Day YYYY HH:MM:SS
BMC Chipset	Dell Remote Management Controller type.
BIOS Version	BIOS version for the system.
PIC Version	PIC FW version for chassis fan control board.

Component Information



Server Board Information

Including Serial Number, BIOS Version, Product ID, Manufacturer, and Manufacture Date.

CPU Information

Including Socket, Manufacturer, Model, and Frequency.

Memory Information

Including Memory ID, Status, Socket, Module Size, Model, and Frequency.

Firmware Update

Use the Firmware Update feature to upgrade to the latest firmware version. The following data is included in the BMC firmware package:

- Compiled BMC firmware code and data
- Web-based user interface, JPEG, and other user interface data files
- Default configuration files

Updating the BMC Firmware Through TFTP/HTTP/FTP

1. Get Reservation ID.

   >ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x30 0x01

   > 01

2. Enable Remote Update.

   >ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x30 0x02 0x01 0x10 0x01 0x00 0x00 0x00 0xff

   >10 01 00 01 01

3. Get Protocol.

   >ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x30 0x02 0x01 0x10 0x02 0x00 0x00 0x00 0xff

   >10 02 00 01 07

4. Set URL.

   HTTP Server Update: (Ex: http://192.168.1.111/s2gv112.bin)

   >ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x30 0x03 0x01 0x10 0x03 0x00

   0x00 0x00 0x01 0xFF 0x68 0x74 0x74 0x70 0x3A 0x2F 0x2F 0x31 0x39 0x32 0x2E 0x31 0x36

   0x38 0x2E 0x31 0x2E 0x31 0x31 0x31 0x2F 0x73 0x32 0x67 0x76 0x31 0x31 0x32 0x2E 0x62 0x69 0x6E ASCII code for URL - "http://192.168.1.111/s2gv112.bin"

   Response: 21 written data length

FTP Server Update: (Ex: ftp://user:user@192.168.1.111/s2gv112.bin)

>ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x30 0x03 0x01 0x10 0x03 0x00

0x00 0x00 0x01 0xFF 0x68 0x74 0x74 0x70 0x3A 0x2F 0x2F 0x31 0x39 0x32 0x2E 0x31 0x36

0x38 0x2E 0x31 0x2E 0x31 0x31 0x31 0x2F 0x73 0x32 0x67 0x76 0x31 0x31 0x32 0x2E 0x62 0x69 0x6E ASCII code for URL - "http://192.168.1.111/s2gv112.bin"

Response: 21 written data length

TFTP Server Update: (Ex: tftp://192.168.1.111/s2gv112.bin)

>ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x30 0x03 0x01 0x10 0x03 0x00

0x00 0x00 0x01 0xFF 0x74 0x66 0x74 0x70 0x3A 0x2F 0x2F 0x31 0x39 0x32 0x2E 0x31 0x36

0x38 0x2E 0x31 0x2E 0x31 0x31 0x31 0x2F 0x73 0x32 0x67 0x76 0x31 0x31 0x32 0x2E 0x62 0x69 0x6E ASCII code for URL - "tftp://192.168.1.111/s2gv112.bin"

Response: 21 written data length

Updating BMC Firmware Through Updating Firmware Command

>ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x08 0x01 0x01 0x80 0x00

Response: 34 firmware update task ID

(force update, config)

>ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x08 0x01 0x01 0x80 0x01

Response: 34 firmware update task ID

(normal update, no config)

>ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x08 0x01 0x01 0x00 0x00

Response: 34 firmware update task ID

(normal update, config)

>ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x08 0x01 0x01 0x00 0x01

Response: 34 firmware update task ID

1 Get Firmware Status.

ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x08 0x02 <Task ID (ex: 0x34)>

Response: Status Code as followed:

0x00: Transmitting Image

0x01: Validating Image

0x02: Programming

0x03: Ready to Accept Image

0x04: USB Unit Stage

0x05: Connecting to server

0x80: General Error

0x81: Cannot establish connection

0x82: Path not found

0x83: Transmission Abort

0x84: Checksum Error

0x85: Incorrect Platform

0x86: Allocate memory failed

0x87: Virtual media detach failed

0xFF: Completed

2 Restart firmware while status code is 0xFF

>ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x06 0x02

Update BMC Firmware Through UI

NOTE: Before beginning the firmware update, download the latest firmware version and save it on your local system. During the process of firmware update, the AC power of the managed system cannot be unplugged and the Web GUI cannot be closed.

NOTE: Once you enter into Update Mode and choose to cancel the firmware flash operation, the BMC must be reset. This means that you must close the Internet browser and log back onto the BMC card before you can perform any other types of operations.

Select the **Enter Update Mode** button from the **Maintenance** tab to put the device in a special mode that allows firmware update. You can now follow the instructions presented below to successfully update the card's firmware. The device resets if update is cancelled. The device also resets upon successful completion of firmware update.

1. Browse to, or enter the path on your system where the firmware image file resides.

   Example:

   C:\Updates\V1.0\<image_name>

   The default firmware image name is s2gv*XXX*.bin (XXX means for version number).

2. Select if you want the BMC to auto reset after the update.
3. Click **Update Firmware**.

   The update might take several minutes. When the update is completed, a dialog box appears.

4. Click **OK** to close the session and automatically log out.
5. After the BMC resets, click **Log In** to log in to the BMC again.

Update BMC Firmware Through SSH

1. Get Reservation ID.

   >ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x30 0x01

   > 01←Reservation ID

2. Enable SSH/Telnet Service.

   >ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x30 0x03 <Reservation ID> 0x04 0x01 0x00 0x00 0x00 0x01 0x00

   >01

3. Enable SSH/Telnet Redirection:

   >ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x30 0x03 <Reservation ID> 0x03 0x02 0x00 0x00 0x00 0x01 0x01

   >01

Front Panel User Interface

The BMC provides control panel interface functionality including indicators (fault, status, and ID LEDs) and buttons (power/ID).

Power Button

The power button turns the device on and off.

ID Button

The control panel Chassis Identify button toggles the state of the Chassis ID LED. If the ID LED is off, pressing the button turns the LED on (blinking). If the LED is on, pressing the button or an IPMI Chassis Identify command turns the LED off.

LEDs

BMC Heartbeat LED

The green LED provides an easy way to indicate that BMC is now enabled.

ID LED

A blinking LED indicates the Chassis Identify command has been accepted.

System Status LED

There is a dual-color LED to show the system status. The BMC turns the LED off after all event logs are cleared.

The behavior of Status LED and ID LED is listed in Table 1-2.

Table 1-2. LED Status

LED	Color	Status	When
Status LED	Amber	Blinks	See "Blinking Health LED Conditions" on page 14.
		Off	Normal status
	Green	On	Amber LED is off
		Blinks	Amber LED is blinking
		Off	DC off

Table 1-2. LED Status (*continued*)

LED	Color	Status	When
ID LED	Blue	Off	Normal status
		Blinks	Identifying the system
Heartbeat LED	Green	Off	BMC is not ready
		Blinks	BMC is ready

Table 1-3. Blinking Health LED Conditions

Item	Description
Temperature Sensors	Non-critical / critical event asserted
Fan Sensors	Non-critical / critical event asserted
Voltage Sensors	State asserted
Power Supply	State asserted
Processor	Thermal trip
Event Logging Disable	• SEL almost full • SEL full
Post Error	System firmware error
Memory	• Correctable ECC error • Uncorrectable ECC error • Correctable ECC error logging limit reached
PCI-E Bus	• Bus correctable error • Bus uncorrectable error • Bus fatal error
Watchdog 2	• Timer expired • Hard reset • Power down • Power cycle

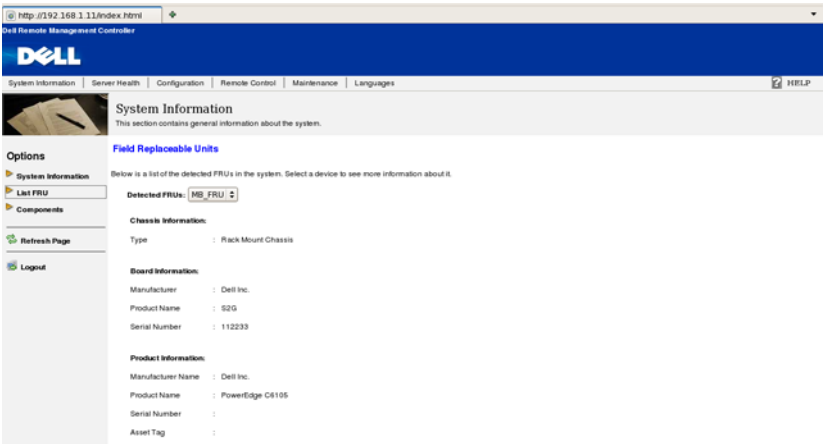
System Information

System Information

The **System Information** tab shows general information about the system including Device Power Status, Firmware Revision, AuxFirmware Revision, Firmware Build Time, BMC Chipset, BIOS Version, and PIC Version.

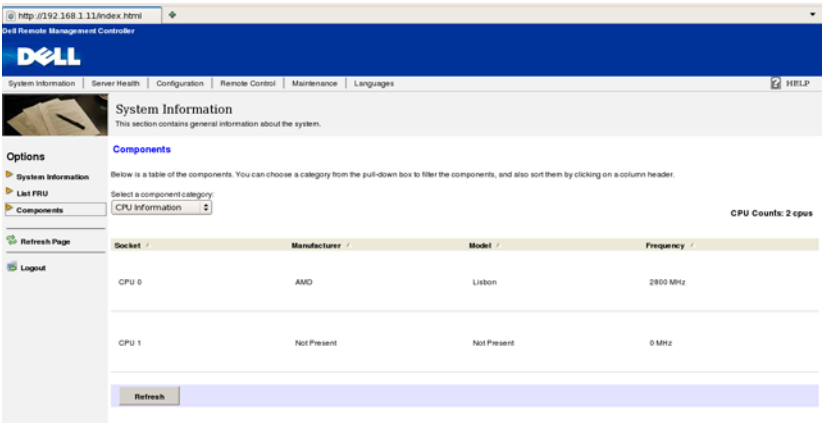
List FRU

The **List FRU** tab shows a list of the detected Field Replaceable Units (FRUs) in the system. Select a FRU item from the drop down list to show more information.



Components

The **Components** tab shows a table of the components. The components can be filtered by category and can be sorted by the column header. The table shows the Socket, Manufacturer, and Model of each component.



Server Health

The **Server Health** tab provides information about the server's health such as sensor readings and the event log. The sensor readings can be shown with or without thresholds in the table.

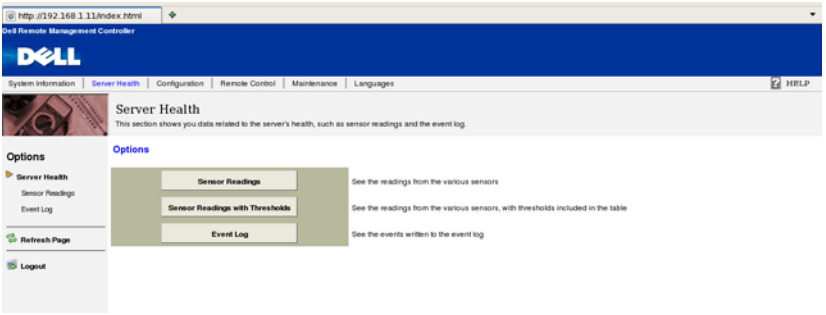


Table 1-1. Server Health Options

Button	Description
Sensor Readings	This button allows you to view the readings from the various sensors.
Sensor Readings with Thresholds	This button allows you to view the readings from the various sensors, with thresholds included in the table.
Event Log	This button allows you to view the events written to the event log.

Sensor Readings

The **Sensor Readings** tab shows all sensor readings from the system.

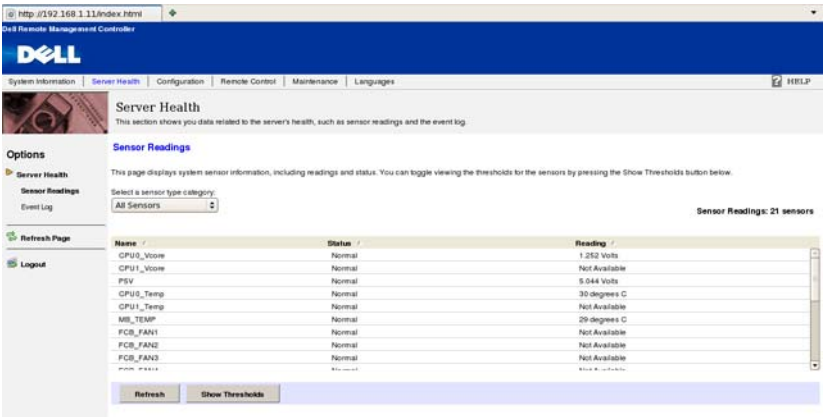


Table 1-2. Sensor Readings

Item	Description
Sensor Type Selection Drop Down Menu	This drop down menu allows you to select the type of sensor readings that you want to show in the list. • All Sensors • Voltage Sensors • Current Sensors

Table 1-2. Sensor Readings

Item	Description
Sensor Readings List	This field shows the individual sensor's name, reading, and the current status of the sensor.
Refresh Button	Use this button to refresh the sensor readings view.
Show Thresholds Button	Clicking **Show Thresholds** button expands the sensor reading table and also shows the various threshold settings for every sensor. • Name • Status • Reading • Low NR • Low CT • Low NC • High NC • High CT • High NR

Sensor Readings With Thresholds

The **Sensor Readings with Thresholds** tab shows all sensor readings and thresholds from the system.

Table 1-3. Sensor Readings With Thresholds

Item	Description
Sensor Selection Drop Down Menu	This drop-down menu allows you to select the type of sensor readings that you want to show in the list. • All Sensors • Voltage Sensors • Current Sensors
Sensor Readings List	This field shows the individual sensor's name, reading and the current status of the sensor. It also shows the following threshold settings for every sensor. • Low NR • Low CT • Low NC • High NC • High CT • High NR
Refresh Button	Use this button to refresh the sensor readings view.
Hide Thresholds Button	Clicking **Hide Thresholds** button reduces the sensor reading table and hides the various threshold settings for every sensor.

Table 1-4. Temperature Thresholds

Temperature	Sensor Number	UNCT	UCT
CPU0_Temp	0x44	75	78
CPU1_Temp	0x45	75	78
MB_TEMP	0x40	60	65
NB_TEMP	0x41	95	98
P0_DIMM_TEMP	0x4C	96	98

Table 1-4. Table Temperature Thresholds (*continued*)

Temperature	Sensor Number	UNCT	UCT
P1_DIMM_TEMP	0x4D	96	98
Chassis_Ambient	0x54	48	50
Outlet_TEMP	0x42	N/A	N/A

Table 1-5. Voltage Thresholds

Voltage Sensor	Sensor Number	Normal	LCT	LNCT	UNCT	UCT
CPU_0_Vcore	0x10	1.00V	N/A	N/A	N/A	N/A
CPU_1_Vcore	0x11	1.00V	N/A	N/A	N/A	N/A
DDRP0_Voltage	0x12	1.5V	1.349V	1.388V	1.599V	1.646V
DDRP1_Voltage	0x13	1.5V	1.349V	1.388V	1.599V	1.646V
DDRP0_Voltage (LV)	0x12	1.35V	1.209V	1.248V	1.443V	1.482V
DDRP1_Voltage (LV)	0x13	1.35V	1.209V	1.248V	1.443V	1.482V
P5V	0x28	5V	4.472V	4.628V	5.330V	5.486V
P3V3	0x15	3.3V	2.958V	3.062V	3.526V	3.629V

Table 1-6. Current Thresholds

Current Sensor	Sensor Number	LCT	LNCT	UNCT	UCT
MB_12V_Current	0xCA	N/A	N/A	N/A	N/A
PSU1_OUT_Current	0x70	N/A	N/A	N/A	N/A
PSU2_OUT_Current	0x71	N/A	N/A	N/A	N/A

Table 1-7. Fan Thresholds

Fan Sensor	Sensor Number	LCT	LNCT	UNCT	UCT
FCB Fan 1	0x6B	1000	1200	N/A	N/A
FCB Fan 2	0x6C	1000	1200	N/A	N/A
FCB Fan 3	0x6D	1000	1200	N/A	N/A
FCB Fan 4	0x6E	1000	1200	N/A	N/A

Event Log

The **Event Log** tab shows a table of the events from the system's event log.

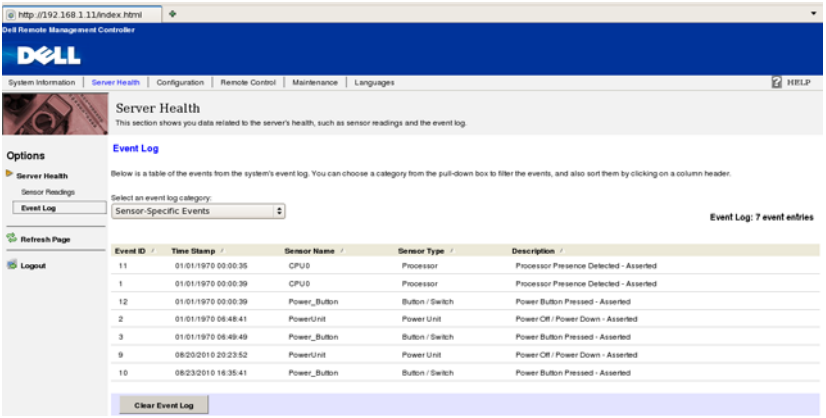

http://192.168.1.11/index.html
Dell Remote Management Controller
DELL
System Information
Server Health
Configuration
Remote Control
Maintenance
Languages
HELP
Server Health
This section shows you data related to the server's health, such as sensor readings and the event log.
Options
Server Health
Sensor Readings
Event Log
Refresh Page
Logout
Event Log
Below is a table of the events from the system's event log. You can choose a category from the pull-down box to filter the events, and also sort them by clicking on a column header.
Select an event log category:
Sensor-Specific Events
Event Log: 7 event entries
Event ID
Time Stamp
Sensor Name
Sensor Type
Description
11 01/01/1970 00:00:35 CPU0 Processor Processor Presence Detected - Asserted
1 01/01/1970 00:00:39 CPU0 Processor Processor Presence Detected - Asserted
12 01/01/1970 00:00:39 Power_Button Button / Switch Power Button Pressed - Asserted
2 01/01/1970 08:48:41 PowerUnit Power Unit Power Off / Power Down - Asserted
3 01/01/1970 08:49:49 Power_Button Button / Switch Power Button Pressed - Asserted
9 08/20/2010 20:23:52 PowerUnit Power Unit Power Off / Power Down - Asserted
10 08/23/2010 16:35:41 Power_Button Button / Switch Power Button Pressed - Asserted
Clear Event Log

Table 1-8. Event Log

Item	Description
Select An Event Log Category	Select one of the following event categories: • Sensor-Specific Events • BIOS-Generated Events • System Management Software Events
Event Log	You can obtain the following information for each event: • Event ID • Time Stamp • Sensor Name • Sensor Type • Description
Clear Event Log Button	Click the **Clear Event Log** button to clear the event logs.

Table 1-9. Blinking Health LED Conditions

Item	Description
Temperature Sensors	Non-critical / critical event asserted
Fan Sensors	Non-critical / critical event asserted
Voltage Sensors	State asserted
Power Supply	State asserted
Processor	Thermal trip
Event Logging Disable	• SEL almost full • SEL full
Post Error	System firmware error
Memory	• Correctable ECC error • Uncorrectable ECC error • Correctable ECC error logging limit reached
PCI-E Bus	• Bus correctable error • Bus uncorrectable error • Bus fatal error
Watchdog 2	• Timer expired • Hard reset • Power down • Power cycle

Configuration

The **Configuration** tab allows you to access various configuration settings including Alerts, Mouse Mode, Network, SMTP, Users, and PEF.

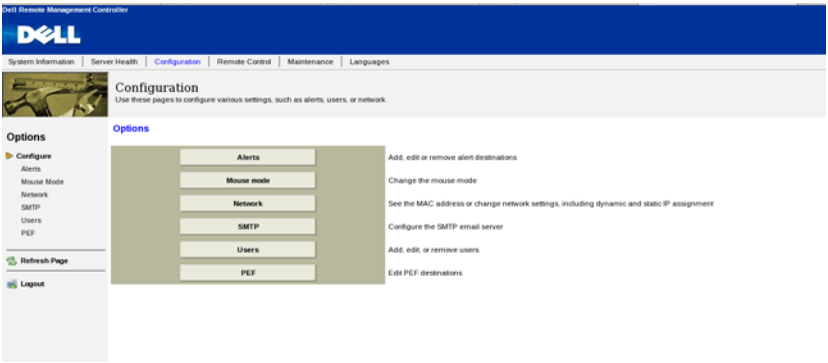


Table 1-10. Configuration Options

Button	Description
Alerts Button	This button takes you to the Alert list tab, where you can add, edit or remove alert destinations.
Mouse Mode Button	This button takes you to the Mouse Mode settings tab, where you can view the current setting and/or change the mode of your pointing device to/from either Relative or Absolute.
Network Button	This button takes you to the Network settings tab, where you can view the MAC address or change network settings, including the dynamic and static IP assignment.
SMTP	This button takes you to the SMTP settings tab, where you can configure the SMTP mail server.
Users	This button takes you to the user list tab, where you can add, edit or remove users.
PEF	This button takes you to the PEF list tab, where you can configure PEF settings including Event Filter Action, Alert Policy Number, Sensor Type, Event Severity, and Event Trigger.

Alerts

On the **Alerts** tab, you can configure alert destinations. To delete an alert, select it and press **Delete**. To create a new alert, select a destination address that has not been configured, yet, from the alert table entry and click **Modify**. To send a test alert, select the alert from the list and click the **Send Test Alert** button.

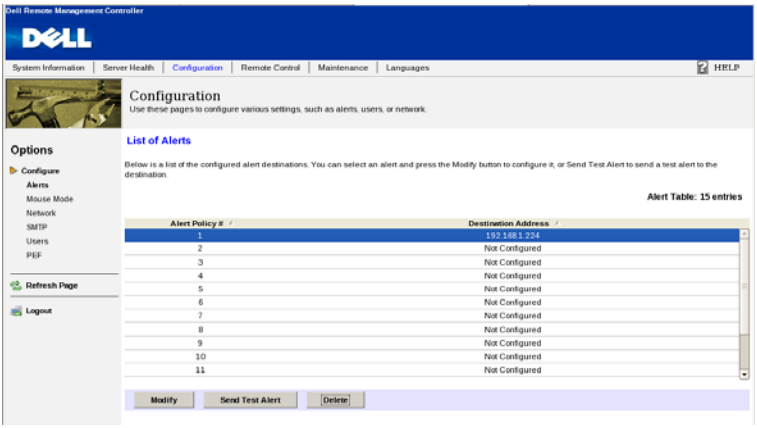


Table 1-11. List of Alerts

Item	Description
Modify Button	Use this button to modify an alert.
Send Test Alert Button	Use this button to send a test alert.
Delete Button	Use this button to delete an alert.

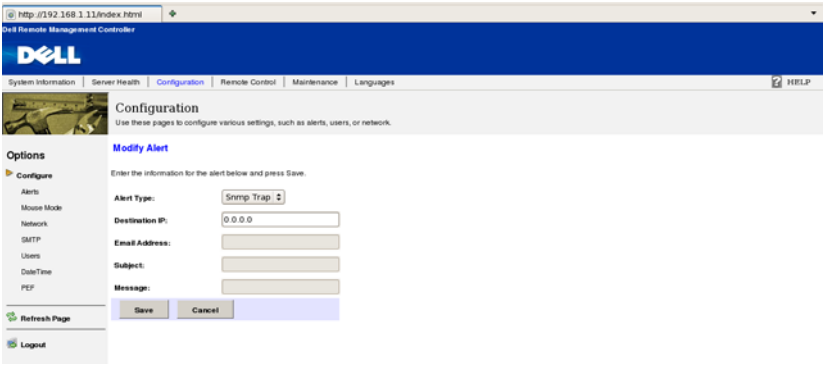


Table 1-12. Modify Alert

Item	Description
Alert Type	You can select the way an alert is sent when it is triggered by an event. • SNMP Trap • Email
Destination IP	Type the SNMP destination IP address into this field. If Email as Alert Type is selected, the field is grayed out.
Email Address	Type the email address into this field. If SNMP Trap as the Alert Type is selected, the field is grayed out.
Subject	Type a subject into this field. If SNMP Trap as the Alert Type is selected, the field is grayed out.
Message	Type a message into this field. If SNMP Trap as the Alert Type is selected, the field is grayed out.
Save Button	Use this button to save your settings.
Cancel Button	Use this button to cancel this action.

Mouse Mode

On the **Mouse Mode** tab, you can configure the mouse mode options.

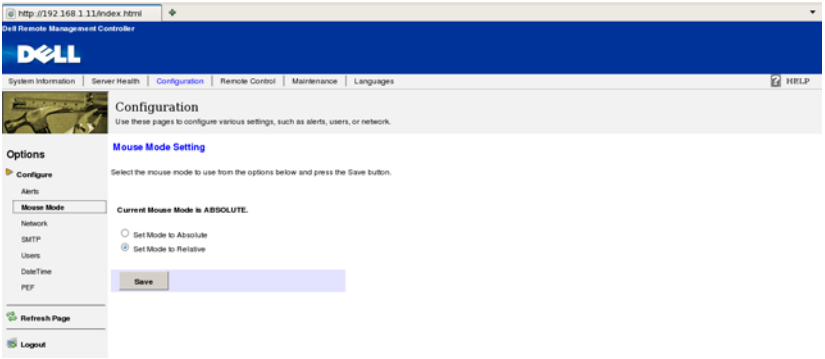


Table 1-13. Mouse Mode

Item	Description
Set Mode to Absolute Option	Select this option to select mouse mode to **Absolute**, depending upon your system. This mode enables you to see two mouse cursors where, one is the redirected host mouse cursor and the other is the actual local mouse cursor. It is recommended to use this mode when the host server is running in the Windows platform.
Set Mode to Relative Option	Select this option to select mouse mode to **Relative**, depending upon your system. In this mode, the user can see only one mouse cursor that is redirected. This mode locks the local mouse cursor inside the redirected window and the user has to press **<Alt+M>** to unlock and stop mouse redirection. Here **<Alt+M>** is basically used to start or stop mouse redirection. It is recommended to use this mouse mode when the host server is running in Linux and other OS platforms.
Apply Button	Use this button to make the settings active.

Network

The **Network** tab allows you to view and modify the network settings. Select whether to obtain an IP address automatically or manually configure one.

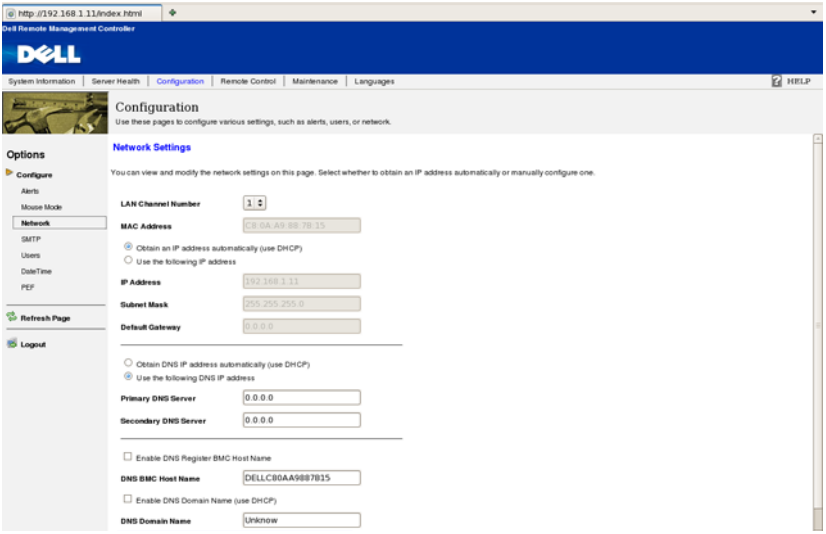


Table 1-14. Network

Item	Description
LOM Port Number	The default is share NIC and the port is LOM 1.
MAC Address	This field shows the MAC address.
Obtain an IP address automatically (use DHCP)	This option allows the BMC's IP to be configured by a DHCP server (dynamically).
Use the following IP address	This option allows you to configure a static IP. The IP Address, Subnet Mask, and Gateway fields become editable when this option is selected.
IP Address	This field allows you to set the BMC's IP address.
Subnet Mask	This field allows you to set the Subnet Mask.
Default Gateway	This field allows you to set the BMC's Gateway access address.
Save Button	Use this button to save your settings.

SMTP

The **SMTP** tab allows you to configure the SMTP mail server.

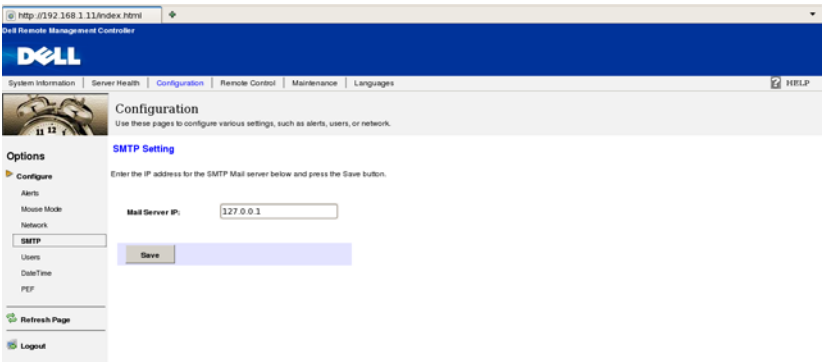


Table 1-15. Modify SMTP

Item	Description
Mail Server IP	This field allows you to configure the IP address of the SMTP mail server.
Save Button	Use this button to save your settings.

NOTE: To test the SMTP server, use the **Send Test Alert** button on the Alerts tab.

Users

The **Users** tab allows you to view the current list of user for the server. If you would like to delete or modify a user, select their name in the list and click **Delete User** or **Modify User**. To add a new user, select an un-configured slot and select **Add User**.

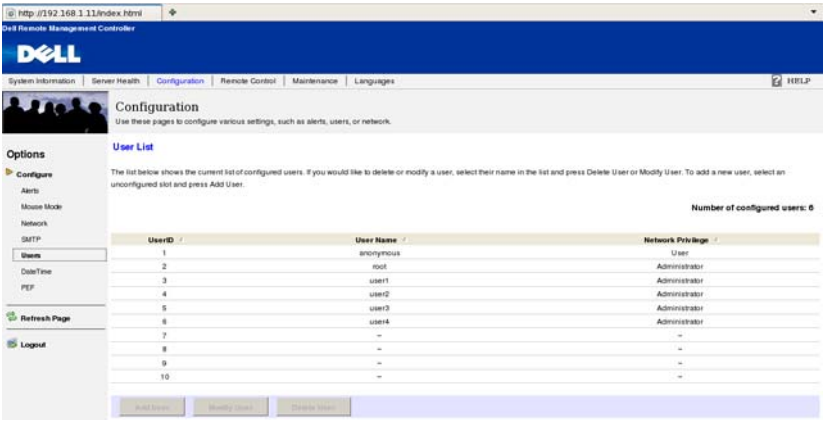


Table 1-16. User List

Item	Description
UserID Column	This column shows the ID number used in association with the User Name.
User Name Column	This column shows a list of all users who are able to access this BMC. **NOTE:** The default administrator is root. It is prudent for you to change the root password.
Network Privilege Column	This column shows the network rights associated with the account.
Add User Button	Use this button to add a new user. Select an open field first.
Modify User Button	Use this button to modify an existing user. Select a user first.

Table 1-16. User List

Item	Description
Delete User Button	Use this button to delete an existing user. Select a user first.

Table 1-17. Add New User

Item	Description
User Name	Enter a user name in the user name field. Your user name must be at least four characters long and no more than 32 characters long. User names are case-sensitive and must start with an alphabetical character.
Password	Enter a password in the password field. Your password must be at least eight characters long. **NOTE:** The password must be a minimum of eight characters and a maximum of 32 characters. Use a combination of alphanumeric and special characters for better security. The password is case-sensitive.
Confirm Password	Confirm your password by entering your password again in the **Confirm Password** field.
Network Privileges Drop Down Menu	Assign network permissions and access rights to any of the following: • Administrator • Operator • User • Callback • OEM • No Access
Add Button	Use this button to add the new user.
Cancel Button	Use this button to cancel this action.

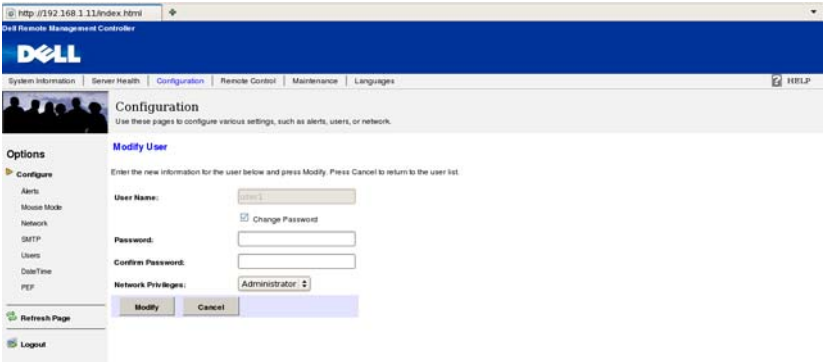


Table 1-18. Modify User

Item	Description
User Name	This field contains the user name being modified. This field cannot be modified.
Change Password Box	Select this box to change the password.
Password	Enter the new password in the password field. Your password must be at least eight characters long. **NOTE:** The password must be a minimum of eight characters and a maximum of 32 characters. Use a combination of alphanumeric and special characters for better security. The password is case-sensitive.
Confirm Password	Confirm your password by entering your password again in the **Confirm Password** field.
Network Privileges Drop Down Menu	Modify network permissions and access rights to any of the following: • Administrator • Operator • User • Callback • No Access
Modify Button	Use this button to update the user account.
Cancel Button	Use this button to cancel this action.

PEF

The **PEF** tab allows you to view the list of the configured PEF destinations. You can select a PEF and press the **Modify** button to configure it.

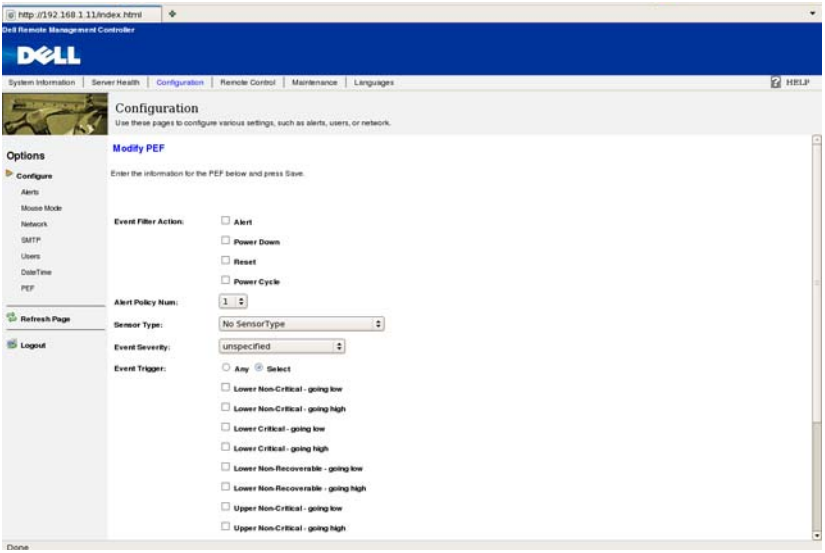


Table 1-19. PEF

Item	Description
Event Filter Action	Specify the corresponding action for a PEF triggered event.
Alert Policy Number	Specify the policy number (default: 1) for the alert policy.
Sensor Type	Specify the sensor type (default: No Sensor Type) to trigger PEF action.
Event Severity	Specify severity level of event to trigger PEF action (default: Unspecified)
Event Trigger	Specify threshold to trigger PEF action. Any: for any event trigger. Select: specify a specific event.

Remote Control

The **Remote Control** tab allows you to initiate Console Redirection and to view the Power Control options.

Console Redirection

The **Console Redirection** tab enables you to use the display, mouse, and keyboard on the local management station to control the corresponding devices on a remote managed system. Click on **Launch Console** to launch the Java-based remote console.

System Requirements

- JRE 1.5 or later
- Windows OS
- Linux OS (Red Hat Enterprise Linux 5.X 32/64 bit, Ubuntu Desktop Edition 10.X 32/64 bit, Fedora Core 8 or later)
- Internet Explorer 6 or later
- Firefox 2.x, 3.x
- Safari 5.0.1

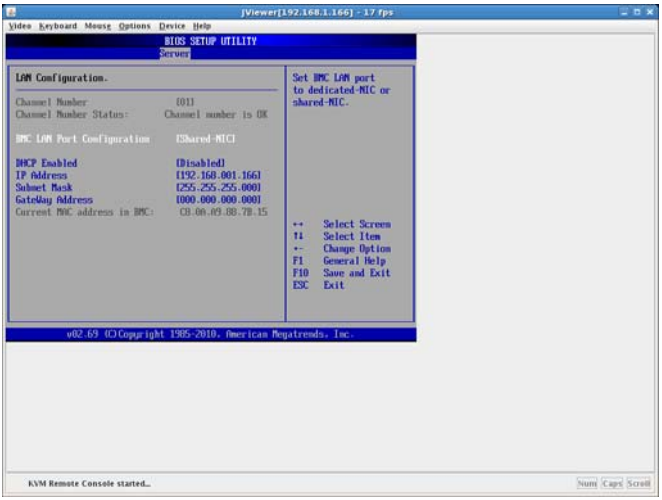


Table 1-20. Console Redirection Buttons

Item	Description
Console Redirection	Use this button to launch the redirection console using Java viewer.
Power Control	Use this button to view the power state and perform power control functions on the server.

Table 1-21. Remote Console Shortcut Key Combinations

Keystroke	Description
<ALT+S>	Start Console Redirection
<ALT+T>	Stop Console Redirection
<ALT+R>	Restart Console Redirection
<ALT+F>	Toggle Full Screen Mode
<ALT+M>	Synchronize Mouse
<ALT+A>	Hold/Unhold Right <ALT> Key
<ALT+B>	Hold/Unhold Left <ALT> Key
<ALT+L>	Hold/Unhold Right <CTRL> Key
<ALT+N>	Hold/Unhold Left <CTRL> Key
<ALT+D>	Generate <CTRL>, <ALT>, + <DEL>
<ALT+E>	Start CD-ROM Drive Redirection

Table 1-22. Console Redirection Window: Keyboard

Menu Item	Description
Hold Right Ctrl Key	This menu item can be used to act as the right-side <CTRL> key when in Console Redirection.
Hold Right Alt Key	This menu item can be used to act as the right-side <ALT> key when in Console Redirection.
Hold Left Ctrl Key	This menu item can be used to act as the left-side <CTRL> key when in Console Redirection.
Hold Left Alt Key	This menu item can be used to act as the left-side <ALT> key when in Console Redirection.
Left Windows Key	This menu item can be used to act as the left-side <WIN> key when in Console Redirection. You can also decide how the key should be pressed: • Hold Down • Press and Release
Right Windows Key	This menu item can be used to act as the right-side <WIN> key when in Console Redirection. You can also decide how the key should be pressed: • Hold Down • Press and Release
<Alt+Ctrl+Del>	This menu item can be used to act as if you pressed the <CTRL>, <ALT> and <DEL> keys down simultaneously on the server that you are redirecting.

Table 1-23. Console Redirection Window: Mouse

Menu Item	Description
Sync Cursor	This menu item can be used to synchronize or un-synchronize the mouse cursor.
Show Cursor	This menu item can be used to show or hide the local mouse cursor on the remote client system.

Table 1-24. Console Redirection Window: Options

Item	Description
Bandwidth	The bandwidth usage option allows you to adjust the bandwidth. You can select one of the following: • Auto Detect • 256 Kbps • 512 Kbps • 1 Mbps • 10 Mbps • 100 Mbps (Default Setting)
KB/Mouse Encryption	This option allows you to encrypt keyboard inputs and mouse movements sent between the connections.

Table 1-25. Console Redirection Window: Device

Menu Item	Description
Redirect CDROM	This menu item can be used to start or stop the redirection of a physical DVD/CD-ROM drive.
Redirect ISO	This menu item can be used to start or stop the redirection of a DVD/CD ISO image.
Redirect Floppy/USB Key	This menu item can be used to start or stop the redirection of a physical floppy/USB key drive.
Redirect Floppy/USB Key Image	This menu item can be used to start or stop the redirection of a floppy/USB key image, instead of a physical driver.

Table 1-26. Console Redirection Window: Help

Menu Item	Description
About JViewer	Shows the copyright and version information.

Server Power Control

The **Server Power Control** tab allows you to view and control the power of your server. Select one of the options listed in the following table to execute on your server. You are asked to confirm your choice. Upon confirmation, the command is executed and you are informed of the status.

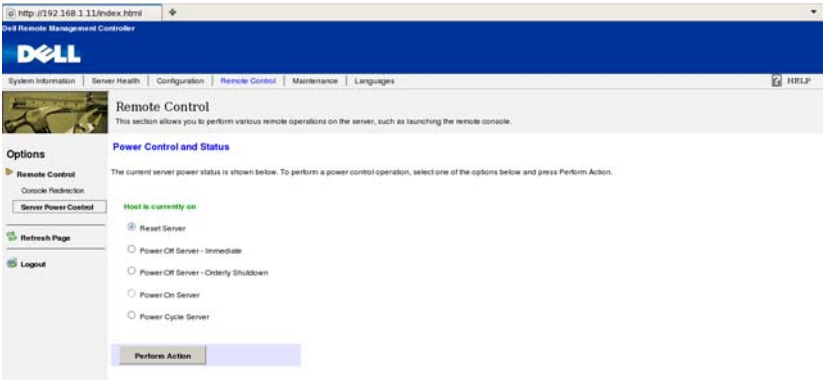
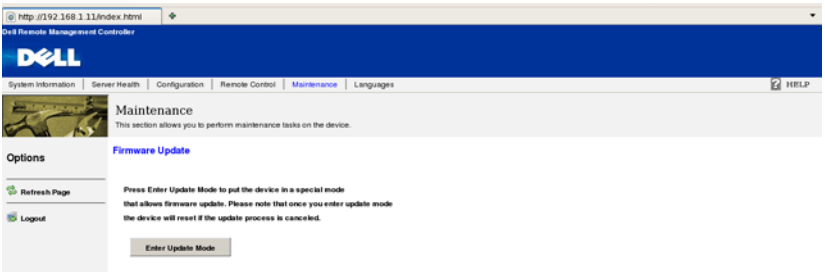


Table 1-27. Power Control and Status

Menu Item	Description
Reset Server Option	Select this option to reset the server.
Power Off Server - Immediate Option	Select this option to power down the server immediately.
Power Off Server - Orderly Shutdown Option	Select this option to power down the server gracefully.
Power On Server Option	Select this option to power up the server.
Power Cycle Server Option	Select this option to power cycle the server.
Perform Action Button	Select this button to execute the option selected.

Maintenance

The **Maintenance** tab allows you to perform maintenance tasks on the device including the Firmware Update. Refer to "Firmware Update" on page 9.



Languages

The **Languages** tab allows you to select the language for the web application. Select the language from the drop down list and click **Apply**.

NOTE: The web interface needs to reload for the change to take effect.

IPMI 1.5 / 2.0

Command Support List

Table 1-28. IPMI Device Global Commands

Command	NetFn	CMD	O/M	Supported
Get Device ID	App	01h	M	Yes
Cold Reset	App	02h	O	Yes
Warm Reset	App	03h	O	No
Get Self Test Results	App	04h	M	Yes
Manufacture Test On	App	05h	O	Yes
Set ACPI Power State	App	06h	O	Yes
Get ACPI Power State	App	07h	O	Yes
Get Device GUID	App	08h	O	Yes
Broadcast Commands:				
Broadcast 'Get Device ID'	App	01h	M	Yes

Table 1-29. BMC Device and Messaging Commands

Command	NetFn	CMD	O/M	Supported
Set BMC Global Enables	App	2Eh	M	Yes
Get BMC Global Enables	App	2Fh	M	Yes
Clear Message Buffer Flags	App	30h	M	Yes
Get Message Buffer Flags	App	31h	M	Yes
Enable Message Channel Receive	App	32h	O	Yes
Get Message	App	33h	M	Yes
Send Message	App	34h	M	Yes
Read Event Message Buffer	App	35h	O	Yes
Get BT Interface Capabilities	App	36h	M	No
Get System GUID	App	37h	M	Yes

Table 1-29. BMC Device and Messaging Commands

Command	NetFn	CMD	O/M	Supported
Get Channel Authentication Capabilities	App	38h	M	Yes
Get Session Challenge	App	39h	M	Yes
Activate Session Command	App	3Ah	M	Yes
Set Session Privilege Level Command	App	3Bh	M	Yes
Close Session	App	3Ch	M	Yes
Get Session Information	App	3Dh	M	Yes
Get Authentication Code Command	App	3Fh	O	Yes
Set Channel Access Commands	App	40h	M	Yes
Get Channel Access Commands	App	41h	M	Yes
Get Channel Info Command	App	42h	M	Yes
Set User Access Commands	App	43h	M	Yes
Get User Access Commands	App	44h	M	Yes
Set User Name Commands	App	45h	M	Yes
Get User Name Commands	App	46h	M	Yes
Set User Password Commands	App	47h	M	Yes
Active Payload Command	App	48h	M	Yes
Deactivate Payload Command	App	49h	M	Yes
Get Payload Activation Status	App	4Ah	M	Yes
Get Payload Instance Info Command	App	4Bh	M	Yes
Set User Payload Access	App	4Ch	M	Yes
Get User Payload Access	App	4Eh	M	Yes
Get Channel Payload Support	App	4Fh	M	Yes
Get Channel Payload Version	App	50h	M	Yes
Master Write-Read I2C	App	52h	M	Yes

Table 1-29. BMC Device and Messaging Commands

Command	NetFn	CMD	O/M	Supported
Get Channel Cipher Suites	App	54h	O	Yes
Suspend/Resume Payload Encryption	App	55h	O	Yes
Set Channel Security Keys	App	56h	O	Yes
Get System Interface Capabilities	App	57h	O	No

Table 1-30. BMC Watchdog Timer Commands

Command	NetFn	CMD	O/M	Supported
Reset Watchdog Timer	App	22h	M	Yes
Set Watchdog Timer	App	24h	M	Yes
Get Watchdog Timer	App	25h	M	Yes

Table 1-31. Chassis Commands

Command	NetFn	CMD	O/M	Supported
Get Chassis Capabilities	Chassis	00h	M	Yes
Get Chassis Status	Chassis	01h	M	Yes
Chassis Control	Chassis	02h	M	Yes
Chassis Reset	Chassis	03h	O	No
Chassis Identify	Chassis	04h	O	Yes
Set Chassis Capabilities	Chassis	05h	O	Yes
Set Power Restore Policy	Chassis	06h	O	Yes
Get System Reset Cause	Chassis	07h	M	Yes
Set System Boot Options	Chassis	08h	M	Yes
Get System Boot Options	Chassis	09h	M	Yes
Set Front Panel Button Enable	Chassis	0Ah	M	Yes

Table 1-31. Chassis Commands

Command	NetFn	CMD	O/M	Supported
Set Power Cycle Interval	Chassis	0Bh	M	Yes
Get POH Counter	Chassis	0Fh	O	No

Table 1-32. Event Commands

Command	NetFn	CMD	O/M	Supported
Set Event Receiver	S/E	00h	M	M
Get Event Receiver	S/E	01h	M	M
Platform Event	S/E	02h	M	M

Table 1-33. SEL Commands

Command	NetFn	CMD	O/M	Supported
Get SEL Info	Storage	40h	M	Yes
Get SEL Allocation Info	Storage	41h	O	No
Reserve SEL	Storage	42h	O	Yes
Get SEL Entry	Storage	43h	M	Yes
Add SEL Entry	Storage	44h	M	Yes
Partial Add SEL Entry	Storage	45h	M	No1
Delete SEL Entry	Storage	46h	O	Yes
Clear SEL	Storage	47h	M	Yes
Get SEL Time	Storage	48h	M	Yes
Set SEL Time	Storage	49h	M	Yes
Get Auxiliary Log Status	Storage	5Ah	O	No
Set Auxiliary Log Status	Storage	5Bh	O	No

NOTE: Support for **Partial Add SEL** is not required when **Add SEL** is supported.

Table 1-34. SDR Repository Commands

Command	NetFn	CMD	O/M	Supported
Get SDR Repository Info	Storage	20h	M	Yes
Get SDR Repository Allocation Info	Storage	21h	O	No
Reserve SDR Repository	Storage	22h	M	Yes
Get SDR	Storage	23h	M	Yes
Add SDR	Storage	24h	M	No
Partial ADD SDR	Storage	25h	O	Yes
Delete SDR	Storage	26h	O	No
Clear SDR Repository	Storage	27h	M	Yes
Get SDR Repository Time	Storage	28h	O	Yes
Set SDR Repository Time	Storage	29h	O	Yes
Enter SDR Repository Update Mode	Storage	2Ah	O	No
Exit SDR Repository Update Mode	Storage	2Bh	O	No
Run Initialization Agent	Storage	2Ch	O	Yes

Table 1-35. FRU Inventory Device Commands

Command	NetFn	CMD	O/M	Supported
Get FRU Inventory Area Info	Storage	10h	M	Yes
Read FRU Inventory Data	Storage	11h	M	Yes
Write FRU Inventory Data	Storage	12h	M	Yes

Table 1-36. Sensory Device Commands

Command	NetFn	CMD	O/M	Supported
Get Device SDR Info	S/E	20h	O	No
Get Device SDR	S/E	21h	O	No
Reserve Device SDR Repository	S/E	22h	O	No
Get Sensor Reading Factors	S/E	23h	O	Yes
Set Sensor Hysteresis	S/E	24h	O	Yes
Get Sensor Hysteresis	S/E	25h	O	Yes
Set Sensor Threshold	S/E	26h	O	Yes
Get Sensor Threshold	S/E	27h	O	Yes
Set Sensor Event Enable	S/E	28h	O	Yes
Get Sensor Event Enable	S/E	29h	O	Yes
Re-arm Sensor Events	S/E	2Ah	O	Yes
Get Sensor Event Status	S/E	2Bh	O	Yes
Get Sensor Reading	S/E	2Ch	M	Yes
Set Sensor Type	S/E	2Dh	O	No
Get Sensor Type	S/E	2Eh	O	No
Set Sensor Reading and Event Status	S/E	2Fh	M	Yes

Table 1-37. LAN Commands

Command	NetFn	CMD	O/M	Supported
Set LAN Configuration Parameters (Note: Parameter 9 and 25 are not supported.)	Transport	01h	M	Yes
Get LAN Configuration Parameters (Note: Parameter 9 and 25 are not supported.)	Transport	02h	M	Yes
Suspend BMC ARP	Transport	03h	O	No
Get IP/UDP/RMCP Statistics	Transport	04h	O	No

Table 1-38. PEF/PET Alerting Commands

Command	NetFn	CMD	O/M	Supported
Get PEF Capabilities	S/E	10h	M	Yes
Arm PEF Postpone Timer	S/E	11h	M	Yes
Set PEF Configuration Parameters	S/E	12h	M	Yes
Get PEF Configuration Parameters	S/E	13h	M	Yes
Set Last Processed Event ID	S/E	14h	M	Yes
Get Last Processed Event ID	S/E	15h	M	Yes
Alert Immediate	S/E	16h	M	Yes
PET Acknowledge	S/E	17h	M	Yes

VLAN Configuration

The VLAN is confiugred through the IPMI Set/Get LAN Configuration command.

To configure the VLAN:

1 Get VLAN ID :

>ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x0C 0x02 0x01 0x14 0x00 0x00

>11 00 00 ←VLAN is disabled/VLAN ID is zero.

2 Enable and Set VLAN ID :

>ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x0C 0x01 0x01 0x14 0x02 0x80

3 Disable VLAN ID :

>ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x0C 0x01 0x01 0x14 0x00 0x00

BMC Version Information

The BMC firmware version can be obtained by using the IPMI - Get Device ID command.

To get the BMC firmware version:

>ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x06 0x01

>20 01 01 16 02 bf 4c 1c 00 47 32 11 76 00 00 Version 1.16

BIOS Firmware Information

The BIOS firmware version can be obtained by using the IPMI - Get Device ID command.

To get the BIOS firmware version:

> ipmitool -H <BMC IP Address> -I lanplus -U root -P root raw 0x30 0x1e

> 53 32 47 5F 33 41 31 35 00 00 Present with ASCII Code : S2G_3A15